cartridge to penetrate at least a layer of adjacent layers of body tissue and to allow the biocompatible wound closure material to be delivered through the needles to penetrate one or more layers of body tissue;

approximating the staple anvil and staple cartridge with adjacent layers of body tissue therebetween; and firing the surgical stapler, wherein firing of the surgical stapler includes driving the plurality of surgical staples through the adjacent layers of body tissue to mechanically secure the layers of body tissue together and concomitantly activating the body tissue property enhancing system to enhance one or more properties of the adjacent layers of repaired or joined body tissue.

2. (Currently Amended) The method according to claim 1, wherein activating [[of]] the body tissue property enhancing system includes delivering an amount of the biocompatible wound closure material to at least one of or between the adjacent layers of repaired or joined body tissue.

3. (Original) The method according to claim 1, wherein upon firing of the surgical stapler, the biocompatible wound closure material is expelled from the reservoir of the staple cartridge.

4. (Currently Amended) The method according to claim 3, wherein, in the providing step, each of the plurality of deployable needles is normally biased to a non-extended position and is movable against the bias to the extended position.

Claims 5-6 (Canceled)

7. (Original) The method according to claim 1, wherein the biocompatible wound closure material is an adhesive material.

8. (Original) The method according to claim 7, wherein the adhesive material is comprised of a protein derived, aldehyde based adhesive material.

9. (Original) The method according to claim 7, wherein the adhesive material is comprised of an albumin/glutaraldehyde material.

10. (Original) The method according to claim 7, wherein the adhesive material is a cyanoacrylate-based material.

11. (Original) The method according to claim 1, wherein the biocompatible wound closure material is a tissue sealant material.

12. (Original) The method according to claim 11, wherein the tissue sealant material is comprised of a synthetic polyethylene glycol-based hydrogel material.

13. (Original) The method according to claim 1, wherein the biocompatible wound closure material is a hemostat.

14. (Original) The method according to claim 13, wherein the hemostat is comprised of a combination of fibrinogen and thrombin.

15. (Previously Presented) A surgical stapler comprising:

a first jaw adapted to receive a staple cartridge in a distal end of the first jaw, the staple cartridge containing a plurality of individual surgical staples, and having a working surface with a plurality of staple slots formed therein;

a second jaw having a staple anvil in a distal end of the second jaw, such that during the operation of the surgical stapler the staple cartridge and the staple anvil can be approximated relative to one another;

a driving member for firing the surgical staples from their staple slots and against the approximated staple anvil;

a body tissue property enhancing system for enhancing one or more properties of body tissue to be repaired or joined by the surgical stapler, the body tissue property enhancing system including:

a biocompatible wound closure material dispensing system for dispensing an amount of surgically biocompatible wound closure material to a target staple site during at least one of prior to, after and concomitant with a firing of the surgical stapler to expel the plurality of staples loaded in the staple cartridge, the body tissue property enhancing system comprising at least one reservoir disposed in the staple cartridge for containing the biocompatible wound closure material therein;

a plurality of ducts formed in the staple cartridge, wherein the plurality of ducts communicate with and extend from the at least one adhesive reservoir to the working surface of the staple cartridge; and

a plurality of deployable needles each having a tip, the needles being adapted and disposed in the ducts of the staple cartridge such that their tips can be extended out of the working surface of the staple cartridge to penetrate at least a layer of the adjacent layers of body tissue and to allow the biocompatible wound closure material to be delivered through the needles to penetrate one or more layers of the body tissue.

16. (Currently Amended) The surgical stapler according to claim 15, wherein ~~the first jaw is adapted to receive a drive~~ the driving member ~~being that~~ is adapted to be slidingly disposed within the staple cartridge, the [[drive]] driving member being adapted to force the biocompatible wound closure material from the reservoir out through the plurality of ducts and about the needles disposed therein as the [[drive]] driving member is displaced in a distal direction, to allow the biocompatible wound closure material to penetrate into the body tissue to be repaired or joined.

17. (Currently Amended) The surgical stapler according to claim 16, wherein the staple cartridge further comprises: one or more laterally spaced rows of individual staple slots, the rows of staple slots extending along the staple cartridge; a plurality of individual surgical staples having a back span and disposed, one each, within the individual staple slots; and a plurality of staple pushers disposed one each within the staple slots and in a position to push one

of the plurality of staples from the slot, wherein the [[drive]] driving member is adapted to displace the staple pushers into the slots and to concomitantly expel a quantity of the biocompatible wound closure material about the needles and out through the plurality of ducts.

18. (Currently Amended) The surgical stapler according to claim 16, wherein the biocompatible wound closure material dispensing system further includes a flexible liner extending longitudinally through the staple cartridge, wherein the liner prevents the biocompatible wound closure material from contacting the [[drive]] driving member as the drive member is displaced distally through the staple cartridge.

19. (Original) The surgical stapler according to claim 16, wherein the plurality of needles have a tip, a first position wherein the needles are entirely retained within the staple cartridge and a second position wherein the tips of the plurality of needles project out from the working surface of the staple cartridge.

20. (Original) The surgical stapler according to claim 19, wherein each of the plurality of needles is biased to the first position.

21. (Original) The surgical stapler according to claim 15, wherein the surgical stapler is for performing open gastrointestinal anastomosis operations.

22. (Original) The surgical stapler according to claim 15, wherein the surgical stapler is for performing endoscopic or laparoscopic gastrointestinal operations.

23. (Original) The surgical stapler according to claim 15, wherein the surgical stapler is for performing end-to-end anastomosis operations.

24. (Original) The surgical stapler according to claim 15, wherein the biocompatible wound closure material is an adhesive comprised of a protein derived, aldehyde-based adhesive material.

25. (Original) The surgical stapler according to claim 24, wherein the biocompatible wound closure material is an adhesive comprised of an albumin/glutaraldehyde material.

26. (Original) The surgical stapler according to claim 24, wherein the biocompatible wound closure material is an adhesive comprised of a cyanoacrylate-based material.

27. (Original) The surgical stapler according to claim 15, wherein the biocompatible wound closure material is a tissue sealant material.

28. (Previously Presented) The surgical stapler according to claim 27, wherein the tissue sealant material is comprised of a synthetic polyethylene glycol-based hydrogel material.

29. (Original) The surgical stapler according to claim 15, wherein the biocompatible wound closure material is a hemostat.

30. (Original) The surgical stapler according to claim 15, wherein the plurality of ducts are positioned adjacent to or aligned between the one or more laterally spaced apart rows of staple slots.

31. (Original) The surgical stapler according to claim 15, wherein each of the plurality of deployable needles is provided with a retracting element for withdrawing each of the plurality of deployable needles back into the staple cartridge after a firing of the surgical stapler.

Claims 32-46 (Canceled).

47. (Previously Presented) A surgical staple cartridge configured and adapted to be removably received within a surgical stapler, the staple cartridge comprising:

a working surface;

one or more laterally spaced apart rows of staple slots formed in the working surface;

a plurality of surgical staples disposed, one each, within the staple slots for mechanically securing adjacent layers of body tissue to one another, and a tissue property enhancing system for enhancing one or more properties of body tissue to be repaired or joined by the surgical stapler, the tissue property enhancing system being configured and adapted to non-mechanically enhance the repaired or joined body tissue, the tissue property enhancing system including:

a wound closer material dispensing system for dispensing an amount of surgically biocompatible wound closure material to a target staple site during at least one of prior to, after and concomitant with a firing of the surgical stapler to expel a plurality of staples loaded in the staple cartridge, the tissue property enhancing system comprising at least one reservoir disposed in the staple cartridge for containing the biocompatible wound closure material therein;

a plurality of ducts formed in the staple cartridge, wherein the plurality of ducts extend from the at least one adhesive reservoir to the upper surface of the staple cartridge; and

a plurality of deployable needles each having a tip, the needles being adapted and disposed in the cartridge and ducts such that their tips can be extended out of the working surface of the staple cartridge and penetrate at least a layer of the adjacent layers of body tissue and to allow the biocompatible wound closure material to be delivered through the needles and to penetrate one or more layers of the body tissue.

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48. (Original) The surgical staple cartridge according to claim 47, wherein the tissue property enhancing system is configured and adapted to deliver an amount of the biocompatible wound closure material to at least one of the adjacent layers of body tissue to adhere the adjacent layers of body tissue to one another.

49. (Original) The surgical staple cartridge according to claim 47, wherein the tissue property enhancing system is configured and adapted to deliver an amount of biocompatible wound closure material between the adjacent layers of body tissue to adhere the adjacent layers of body tissue to one another.

50. (Original) The surgical staple cartridge according to claim 47, wherein the staple cartridge includes a reservoir adapted to contain a quantity of the biocompatible wound closure material.

51. (Original) The surgical staple cartridge according to claim 50, wherein normally each of the plurality of deployable needles is biased into a retracted condition.

Claims 52-54. (Canceled)

55. (Previously Presented) A surgical stapler comprising:

a handle assembly;

a tubular body portion extending from the handle assembly;

a staple cartridge assembly operatively connected to a distal end of the tubular body, the staple cartridge including a pair of annular arrays of staple receiving slots, wherein each staple receiving slot includes a surgical staple disposed therein for mechanically securing adjacent layers of body tissue to one another, an anvil member operatively connected by a shaft to the distal end of the tubular body, opposite the staple cartridge assembly; and

a body tissue property enhancing system configured and adapted to non-mechanically enhance one or more properties of the adjacent layers of repaired or joined body tissue to one another along an annular staple line formed by the firing of the surgical stapler, the body tissue property enhancing system including an annular array of needle receiving slots, and a plurality of deployable needles disposed, one each, in the annular array of needle receiving slots for delivering the body tissue enhancer through the needles.

56. (Currently Amended) The surgical stapler according to claim 55, wherein the body tissue property ~~reinforcing~~ enhancing system is configured and adapted to deliver an amount of biocompatible wound closure material to the adjacent layers of body tissue to enhance the repairing or joining of the adjacent layers of body tissue to one another.

57. (Original) The surgical stapler according to claim 55, wherein the biocompatible wound closure material is an adhesive and the body tissue property enhancing system is configured and adapted to deliver an amount of the adhesive into at least one of the adjacent layers of body tissue to adhere the adjacent layers of body tissue to one another.

58. (Original) The surgical stapler according to claim 55, wherein the surgical stapler is for performing end-to-end anastomosis operations.

59. (Currently Amended) The surgical stapler according to claim 58, wherein the staple cartridge assembly includes [[an]] a staple pusher including a distal portion defining

concentric rings of peripherally spaced fingers adapted to be receivable, one each, within a respective one of the pair of annular arrays of staple receiving slots and a respective one of the annular array of needle receiving slots.

60. (Original) The surgical stapler according to claim 59, wherein each deployable needle is biased into a retracted position.

61. (Original) The surgical stapler according to claim 59, wherein each deployable needle is biased to a retracted position by a spring.

62. (Original) The surgical stapler according to claim 61, further including a plurality of capsules disposed, one each, in the array of needle receiving slots, between a respective needle and a respective finger which is receivable in the needle receiving slot.

63. (Original) The surgical stapler according to claim 62, wherein each capsule encapsulates a quantity of biocompatible wound closure material therein.

64. (Original) The surgical stapler according to claim 63, wherein each capsule is adapted to rupture upon application of a compressive force.

65. (Original) The surgical stapler according to claim 64, wherein the compressive force is applied to each of the capsules by the distal advancement of the fingers receivable within the needle receiving slots and through the respective needle receiving slots.

66. (Original) The surgical stapler according to claim 65, wherein distal advancement of the fingers receivable within the needle receiving slots causes the plurality of needles to deploy.

Claims 67-74. (Canceled)

75. (Previously Presented) The surgical stapler according to claim 1, wherein the plurality of deployable needles are each adapted to allow the biocompatible wound closure material to be delivered along an exterior of the needles.